

Amendments to the Claims:

Please amend the claims, without prejudice, as follows:

Listing of Claims:

1-2. (Cancelled).

3. (Currently Amended) An autonomous cleaning apparatus, comprising:
a drive system operable to enable movement of the cleaning apparatus;
a controller in communication with the drive system, the controller including a processor
operable to control the drive system to provide at least one pattern of movement of the cleaning
apparatus; and

a debris sensor responsive to debris being collected by the apparatus for generating a debris
signal indicating that the cleaning apparatus is collecting has collected debris;

wherein the processor is responsive to the debris signal to (1) select a pattern of movement
an operative mode of the cleaning apparatus and (2) steer the cleaning apparatus toward an area
containing debris.

4. (Currently Amended) The apparatus of claim 3 wherein the debris sensor comprises
spaced-apart first and second debris sensing elements respectively operable to generate first and
second debris signals; and

wherein the processor is responsive to the respective first and second debris signals to select
a pattern of movement an operative mode and steer the cleaning apparatus toward an area
containing debris.

5. (Currently Amended) The apparatus as in one of claims 3 or 4 wherein the debris sensor
comprises a piezoelectric sensor element located proximate to a cleaning pathway of the cleaning
apparatus and responsive to a debris strike to generate a signal indicative of such strike and thus of
debris being collected.

6-25. (Cancelled).

26. (Currently Amended) The apparatus of claims 3 or 5 wherein the processor is operable
to receive the debris signal and calculate therefrom a debris gradient, representative of changes in
debris strikes and thus of changes in debris being collected as the cleaning apparatus moves.

27. (Currently Amended) The apparatus of claim 26 wherein the processor is responsive to
the sign of the debris gradient to select a pattern of movement an operative mode.

28. (Currently Amended) The apparatus of claims 5 or 12 wherein the piezoelectric sensor element comprises a flexible piezoelectric film.

29-33 (Cancelled).

34. (Currently Amended) A method of operating an autonomous cleaning apparatus, the method comprising:

using a processor to control a drive system of the cleaning apparatus to provide at least one pattern of movement of the cleaning apparatus;

using a debris sensor in communication with the processor and responsive to debris being collected by the cleaning apparatus to generate a debris signal indicating that the cleaning apparatus is collecting has collected debris; and

using the processor to respond to the debris signal to (1) select a pattern of movement an operative mode of the cleaning apparatus and (2) steer the cleaning apparatus toward an area containing debris in response to the debris signal.

35. (Currently Amended) The method of claim 34 wherein the debris sensor responsive to debris being collected comprises spaced-apart first and second debris sensing elements respectively operable to generate first and second debris signals; and

wherein the processor is responsive to the respective first and second debris signals to select a pattern of movement an operative mode and steer the cleaning apparatus toward an area containing debris.

36. (Currently Amended) The method as in one of claims 34 or 35 wherein the debris sensor responsive to debris being collected comprises a piezoelectric sensor element located proximate to a cleaning pathway of the cleaning apparatus and responsive to a debris strike to generate a signal indicative of such strike.

37-56. (Cancelled).

57. (Currently Amended) The method of claims 34 or 40 wherein the processor is operable to receive the debris signal and calculate therefrom a debris gradient, representative of changes in debris strikes, as the cleaning apparatus moves.

58. (Currently Amended) The method of claim 57 wherein the processor is responsive to the sign of the debris gradient to select a pattern of movement an operative mode.

59. (Currently Amended) The method of claims 36 or 43 wherein the piezoelectric sensor element comprises a flexible piezoelectric film.

60-62. (Cancelled).